

Solve the following equations. Show work on both sides of the equation.

EXAMPLES

$$\begin{aligned}
 1. \quad & -3x + 15 = -9 \\
 & -3x = -24 \\
 & x = 8
 \end{aligned}$$

$$\begin{aligned}
 2. \quad & 6x - 8 = -2x + 48 \\
 & 8x = 56 \\
 & x = 7
 \end{aligned}$$

$$\begin{aligned}
 3. \quad & 5(x + 8) = -3(x + 16) \\
 & 5x + 40 = -3x - 48 \\
 & 8x = -88 \\
 & x = -11
 \end{aligned}$$

$$\begin{aligned}
 4. \quad & -10 = 6 + 2(x - 1) \\
 & -10 = 6 + 2x - 2 \\
 & -14 = 2x \\
 & -7 = x
 \end{aligned}$$

EXERCISES

$$\begin{aligned}
 5. \quad & -2x + 18 = 48 \\
 & -2x = 30 \\
 & x = -15
 \end{aligned}$$

$$\begin{aligned}
 6. \quad & 4(x - 3) = 60 \\
 & 4x - 12 = 60 \\
 & 4x = 72 \\
 & x = 18
 \end{aligned}$$

$$\begin{aligned}
 7. \quad & 11x - 6 = 8x + 15 \\
 & 3x = 21 \\
 & x = 7
 \end{aligned}$$

$$\begin{aligned}
 8. \quad & x + 25 = -4x + 75 \\
 & 5x = 50 \\
 & x = 10
 \end{aligned}$$

$$\begin{aligned}
 9. \quad & 6(x + 4) = 2(x + 16) \\
 & 6x + 24 = 2x + 32 \\
 & 4x = 8 \\
 & x = 2
 \end{aligned}$$

$$\begin{aligned}
 10. \quad & 4(x + 3) = -2(x - 9) \\
 & 4x + 12 = -2x + 18 \\
 & 6x = 6 \\
 & x = 1
 \end{aligned}$$

$$11. \quad 5(x-6) = 2x - 24$$

$$5x - 30 = 2x - 24$$

$$3x = 6$$

$$x = 2$$

$$12. \quad 27 = 9 + 3(x+2)$$

$$27 = 9 + 3x + 6$$

$$12 = 3x$$

$$4 = x$$

$$13. \quad 4 + 5(x-3) = 29$$

$$4 + 5x - 15 = 29$$

$$5x = 40$$

$$x = 8$$

$$14. \quad -7 = -1 + 6(x+2)$$

$$-7 = -1 + 6x + 12$$

$$-18 = 6x$$

$$-3 = x$$

$$15. \quad 2 + 6(x+1) = 22 + 2(x-3)$$

$$2 + 6x + 6 = 22 + 2x - 6$$

$$4x = 8$$

$$x = 2$$

$$16. \quad 8 + 5(x+2) = 3x + 26$$

$$8 + 5x + 10 = 3x + 26$$

$$2x = 8$$

$$x = 4$$

The data in the following table shows the attendance at the performances of a play.

Performance Number	Attendance
2	100
6	260

17. Find the slope of the line that connects the two data points.

$$\frac{260 - 100}{6 - 2} = \frac{160}{4} = 40$$

18. Write an equation in point-slope form for the line.

$$y - 100 = 40(x - 2)$$

or

$$y - 260 = 40(x - 6)$$

19. At what performance number can we expect the attendance to equal 380 (A full house!)?

$$380 - 100 = 40(x - 2)$$

$$280 = 40x - 80$$

$$360 = 40x$$

$$9 = x$$